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TRUTH AND LIBERTY.

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Signal Corps of the Utah National Guard.

Organization of Twenty-Three Men Equipped Adequately to Perform Any Service Which Might Be Demanded of It—Men With Technical Training Are Included in Its Membership—Coming Division Encampment on Crow Creek Forest Reserve, Wyo., For Two Weeks in August.

UTAH has in its National Guard an organization composed of 23 men which, in regard to the class of work required of it is somewhat unique as a military organization when viewed by the layman, whose knowledge of military affairs is unusualy restricted to what he learns when soldiers are on parade or what he may read in magazines and newspapers. Ordinarily the civilian thinks that all soldiers must use rifles, man cannons or take part in the spectacular scenes of a battle. Ordinarily he does not know that there are other men called upon to perform service taking equal rank in importance, but which has little of the glamor of actual combat. There are soldiers who have to do little but draw maps, others to load freight on trains and shfps in the service of quartermaster and commissary departments, others to build roads and bridges. Then there are the men who seldom fire a shot during an entire war, but who keep up the communications by means of telegraph lines, telephone lines, heliograph stations, flag stations and in other ways perform services that seldom find their way into the accounts of a war, but without which a victory would have been almost impossible.

IS DOING FIELD WORK.

The Signal Corps of the National Guard of Utah is preparing for just such work and is adequately equipped to serve wherever needed. Among the innovations recently undertaken in this organization is the establishment of a telegraph school where its members are taught to man telegraph wires, construct and maintain lines and enter the field of elementary telegraph engineering. Telephony is also given much attention and elaborate equipment is on hand for this work. In the recent government inspection conducted by the war department to ascertain the efficiency of various state military organizations, this Utah organization was present with a showing of 100 per cent. Enlisted men in the organization, after having studied telegraph only two months, transmitted telegraphic messages to the apparent satisfaction of the inspecting officer. Its equipment is valued at more than $4,000 and active work in the field is being undertaken partly in preparations for the big camp to be held in Wyoming in August and also to be prepared to render such service as might be required of it in time of need.

A PLAN FOR PEACE.

Concerned in no remote degree in the program for universal peace, is the movement in the war department to increase the available number of trained men for use in war should it come. This is especially true as it concerns land forces. It is admitted to be utterly beyond question that the stronger the armed forces of a nation the more unlikely is war. There is no decided movement in the direction of increasing the size of the standing army, but every effort is being lent to an increase in the strength of the reserve in numbers and efficiency. Under the operation of the act usually referred to as the Dick bill, an act to promote the efficiency of the militia, the government is leaving no stone unturned to accomplish its purpose.

RADICAL CHANGES.

An army of the military service that for many years, both in the regular establishment and in the National Guard, has suffered from neglect is now particularly in the eye of the war department. This is the signal corps. Nearly every state has in its national guard organization a detachment of signal troops. The instruction has been along lines greatly at the option of the signal officers in immediate control of the detachments. This is a plan that is undergoing radical changes. The general government has for many years had in operation at Fort Leavenworth, Kan., a school where signalling is given much attention. The importance of signal corps troops is generally one that is but little understood by those outside the military service. Of the infantry, cavalry and artillery the average citizen is much better informed.

MODERN WARFARE.

In the recent war between Russia and Japan, it is recorded that at one time during the assault on the Russian forces at Port Arthur the Japanese forces occupied a position extending over 25 miles from left to right and from the fighting line to the reserves troops were scattered over country of greatly diversified terrain for nearly as great a distance. Modern warfare partakes greatly of the scientific principles involved in a game of chess, the manoeuvering of the various units of a fighting force measuring the victory and the victor. Modern warfare moves much more rapidly than in comparatively remote periods. It is so in all lines and the advancement has been marked no more than in the conduct of war. The problem ever confronting a commander of a fighting force resolves itself into the question of how, where and when to move a given unit to accomplish a given purpose. The element of time therefore becomes one of the first consideration. To harness the clock is the duty of the signal corps and the advance in the utilization of electrical energy has played a part of the utmost importance in the development of this branch of the service.

OCCASIONALLY EFFECTIVE.

In the time of Grant, Sherman and Sheridan, signal troops were used quite effectively at times. The necessary phrase "at times" is worthy of consideration. In order to be sure that a message would be delivered, Grant was wont to intrust its delivery to one of his staff officers, or a number of them. When it was not so important, he entrusted it to his signal troops. The progress of affairs in general, including the art of war, has made necessary the reverse of this proposition. The signal troops must at all time be dependable and capable of surmounting almost impossible obstacles.

With troops extended over an area of several hundred square miles and the command vested in one man, it is necessary that he be kept in touch with every unit of his command at all times. For this purpose he may use such lines of communication as may be found in the country where he finds himself, telegraph and telephone lines. Where he does not find them, he must construct them, and that quite hastily, for the theater of war in modern times is one in which the scenes may shift quickly.

MUST BE TRAINED MEN.

The signal detachment must be composed of trained men, many of them must be telegraphers, many must be able to install and operate telephone systems, others to use flags, lanterns and heliographs for opening up communication. All are important in their own particular function.

TELEGRAPH IS RESTRICTED.

The necessary parts of a telegraph line are too well known to need comment. Operators, wire, batteries and instruments are almost the only requisites. Where favorable conditions prevail and where a commander may expect to remain for any considerable length of time in one vicinity, this method of communication may be utilized. The telegraph, for the transmission of orders for actual rapid movements of troops, however, is of restricted use. Wire tapping is a source of much trouble and the necessity for good insulation of lines frequently prevents the concealment of them and the opportunity afforded an enemy to destroy them is always a threatening and disconcerting element to consider.

THE USEFUL BUZZER.

The buzzer, of which few people know the nature, comes in to take up an important work. This apparatus is operated with a current of high induction through a single wire and a ground, that is one heavily protected wire connects stations, while the earth is used for the return current. The wire used is light, but tough and strong and may be payed out from a reel carried by a mounted man at a trot. It is thus seen that a line may be constructed with great dispatch and it may be concealed in brush, rocks and even in ditches and swamps, the insluation being almost waterproof. The buzzer itself is a small and compact affair contained in a leather case with strap for carrying, the whole weighing about six pounds. It is both a telephone and a buzzer telegraph. By means of an induction coil, which is an important part of the apparatus, the soft iron diaphram of an ordinary telephone receiver is made to vibrate with a singing sound that may be heard above the noise of cannon and crackling rifles. Messages are sent by using the ordinary Morse telegraph signals. This instrument has been operated without relaying over a distance of 500 miles. Such is the nature of the electrical current employed that messages have been sent over lines in which the wire was broken with open gaps several yards in extent. Such a performance would almost be discredited by many electrical experts if actual cases were not of record. At any army signal school communication has been maintained between two mounted men, using their horses to complete the circuit, the current passing through their bodies and into the ground, being taken into the instrument from the bits in their mouths. Over comparatively short distances with a well insulated and unbroken line the telephone connected with the buzzer may be used with much success. Many times in country where wire fences are used to any considerable extent, instruments may be attached directly to them, thus making unnecessary the construction of a line. Steel rails forming railway tracks are also of great use and even in cases where frequent "grounds" occur they have been used with marked success.

FIELD TELEPHONE.

The field telephone is another form of electrical apparatus in extensive use. This may be used on the field with or without a central exchange. Two or three, or even more instruments may be in a circuit and a tworing or other method of signalling be employed to make calls and establish communication. The telephone sets are compact and may be carried with ease by one man. Their parts are so simply constructed that repairs may be made with little trouble. Portable central exchange boards accommodating ten telephones are so made that they may be mounted on a tripod and operated from a tent or the open, giving intercommunication between the ten stations in the manner afforded by a commercial system.

HELIOGRAPHING.

Interesting for many reasons is the heliograph, which is not, however, so modern as is the electrical apparatus in use. The heliograph, in effect, is composed of two plate mirrors about six inches square and a shutter for revealing and obscuring the flash. The flash is obtained from the reflection of the sun's rays. In the center of one mirror is focused the station with which it is desired to communicate and in the center of the other mirror the sun's rays are concentrated and then reflected to the center of the other mirror, which directs the flash to the distant station. At a distance of 25 miles and up to greater distances the flash is circular in form and of great diameter. Its brilliance is so intense that it must be read through smoked or darkened glasses. The shutter is so constructed that the flash may be "chopped" up into short and long flashes and formed into letters composed of combinations of the figures 1 (one) and 2 (two). The letter A is represented by 22, or two short flashes followed by two more in quick succession. The letter B is represented by 2112 and the other letters and figures by other combinations. Messages may be handled almost as fast in this means as by telegraph, though the instrument may be operated only on bright days. At night a lantern employing acetylene gas is used in a similar manner, concentrating the rays of the burning gas in a bright and penetrating flash which may be read up to 25 miles. The use of the heliograph requiring no wires or cumbersome material, its service is one of much importance and by no means has been rendered obsolete by the perfection of instrutments employing electricity.

SIGNAL FLAGS.

Signal flags are also important as apparatus. These flags are almost obsolete; but may still be used to good advantage when other equipment is not available. Messages may be sent as far as 20 miles with large flags on a clear day, powerful field glasses being used to read the same. A movement to the right is read as one and a movement to the left is read as two and the same signals used as are employed in the use of the heliograph. The flags are either white or red, with square centers of the same color, red against white and vice versa. The use of either depends upon the background affording the geater contrast. The size of the flags varies from four feet square to eight feet square and the manipulation in sending a message is one requiring much practise to keep the flag unfurled.

EXTENDED LINES.

In modern warfare, as has been already indicated, bodies of troops are no longer massed in great numbers in either offensive or defensive actions, but are separated into units at some distance from each other, giving a wide front and affording a poor target as compared to formations used less than 100 years ago. A thin line of skirmishers backed up by supports and reserves with artillery covering an advance or retreat from long range and cavalry scouting about the theater of war securing information as to the nature of strange country, the location of the enemy and making maps for the use of the commanding general are now the principal characteristics of an action. These lines may extend for many miles, portions of the forces being employed may be scattered about the country in protected necks, behind hills, in trenches and concealed in wooded country. It is necessary that whenever a movement in a desired direction is contemplated, the troops must be advised at once of the intention of the commander. Co-operative action is an absolute necessity. Discipline demands it. Success is impossible without it. Things move quickly on a modern battlefield and the employment of messengers to carry orders several hundred miles is hardly to be thought of. The signal troops are thus brought into play to convey orders, transmit information secured by scouting parties and to notify the commanding general of the results of movements, so that proper plans may be laid to follow up others. A comparison often made is one in which a fighting force is considered as a human body, the commanding general being the head, the infantry the legs, the cavalry the eyes and the artillery the arms and the muscles with which to crush. All would be useless without the nerves, and the signal troops have been called upon to perform this function.

EQUIPMENT OF N. G. U.

Bringing the subject matter to a local viewpoint, the signal corps of the National Guard of Utah comes to the front. This organization of 23 men is equipped adequately to perform any service which might be demanded of it. It has buzzers, telegraph equipment, wire reels, a field telephone exchange and station instruments, heliographs, acetylene flash lanterns, flags and all accessory apparatus. Its officers are supplied by the general government with text books for the proper study of the use and repair of equipment. As development progresses in the schools conducted in different parts of the United States, bulletins are issued and freely circulated so that the national guard organizations are kept up-to-date in matters affecting the profession.

HOME TELEGRAPH SCHOOL.

A part of the instruction of the Utah contingent that is of great importance is its telegraph school, conducted by J. A. Spiker, assistant superintendent of the Western Union Telegraph company. Under his direction the corps members are rapidly attaining a standard of high efficiency in the handling of messages and the construction and maintenance of lines. Included in the membership of the corps are several technical men, including electrical engineers, electricians, draftsmen, telephone engineers, photographers and practical mechanics. The instruction of the members touches all of the above professions in an elementary way and affords any ambitious young man an opportunity to learn paying professions in addition to the experience gained in military affairs.

THIS YEAR'S ENCAMPMENT.

The interest of the members of this organization, as well as all others, is centered in the coming provisional division encampment on the Crow Creek forest reserve in Wyoming near Cheyenne. It is to this camp ground that the Utah troops and those of all other states in the department of the Colorado will go this year, regulars and militiamen being brought together for a two weeks' stay. During this time actual war conditions are to be simulated and maneuvers embracing almost every phase of war will be employed to teach the art of combat. During these maneuvers the troops will be employed in marches in supposedly hostile country, in attacking an enemy, camping in strange country and at all times it will fall to the duty of the signal troops to keep the commander of the forces to which they may be attached, informed of everything happening within sight or hearing and to transmit the orders of the commanding officer. In preparation for this, actual field work has been begun.

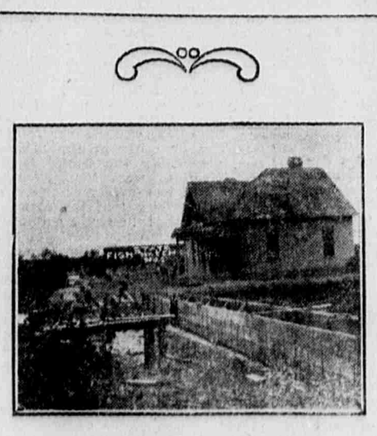
MEN AT WORK.

The photographs reproduced herewith were taken during last week's practise. In the one showing five men at work the man with the field glasses is sending a message with the heliograph which is mounted on the tripod near him. The shutter, on a separate tripod, obscures his mirrors, only one of which is seen in the picture. The man nearest him is reading the message to him as he sends it. In the rear behind the telescope is the officer in charge of the station. He is reading a message through a high power telescope and darkened glasses, the man near him recording it. A sergeant is seen holding the station flag. In the other photograph the sergeant is sending a message with the signal flag, the man near him reading it to him word by word. In the rear is seen the reader and recorder of the squad. With the flag, when the picture was being taken, a message to a point about six miles distant was being sent in reply to one that had been received a few minutes before. The heliograph on the day the picture was taken, was used at a moderate distance, but this equipment is capable of transmitting a message for 100 miles and with a large eight inch mirror, the distance to which a message may be sent is limited only by the curvature of the earth.

SIDELIGHTS ON RESTOCKING UTAH TROUT STREAMS

TO restock the streams of Utah with trout in such quantities as will guarantee against any diminuation of the supply, nowithstanding the yearly inroads of the sportsman's hook is the object sought to be attained by the state department of fish and game. And to this end a trout hatchery was established years ago, but the old building has proved woefully inadequate for the purpose in hand, although it has in its time, done wonders.

The present hatchery is situated about half a mile due east of Murray, on Spring creek. It comprises a large shed containing a dozen or more hatching troughs, consisting of metallic lined troughs about four inches deep by 14 inches wide by 30 feet long, and from the spawn, or eggs, the fish begins his life in these troughs, where he gains his daily sustenance until he is probably two inches long, when he is dumped into a large bucket and distributed over the many fresh water streams and ponds of the state. The building is capable of hatching out about 4,500,000 trout fry per year, but according to the officials in charge, this is only half enough to keep the stock up to the standard in the state; and should the hopes of the present fish and game commissioner and his assistants be realized, within a very short time the capacity of the hatchery will be doubled and the number of fry distributed over the state each year will be fully 8,000,000.



RESIDENCE OF SUPERINTENDENT

CROMAR LANDS ONE.

INCOME FROM LICENSES.

A year ago last march H. B. Cromar, the present fish and game warden, entered into possession on behalf of the state of the ponds, hatchery, etc., constituting the holdings of the commonwealth in all that pertained to fish and game at the site of the hatchery just above Murray. On account of lack of funds with which to properly prosecute the work of fish propagation, and in fact, to do anything else with, the former fish and game officials of the state were seriously handicapped; but they wrought as best they might with the limited means at their disposal. The legislature of 1907 passed a law requiring every fisherman and hunter to take out a game license before plying rod or gun within the boundaries of the state of Utah, for which residents must put up a consideration of $1 and foreigners $10. From this license fund last year the sum of $21,500 was realized for the benefit of the fish and game preserves of the state, and this year the number of licenses is expected to run up to fully 26,000. With this fund to work from, Mr. Cromar has been able to make a good start toward an extension of the cultivation of game fish, and he has already distributed probably 1,500,000 fry throughout the state since the first of the present year.

FRY FOR MOAB.

E. N. Jacklin, superintendent of the fish hatchery, left Tuesday for Moab taking with him 50,000 fry of brook trout for planting in the streams of Grand county. A consignment of many hundreds of thousands trout fry was recently shipped to the waters of Cache valley, and there are now several troughs full of the gamey little minnows ready to send out to other streams in the state.

"Trout fry means the fish any time after he has left the egg and up to the time he is two inches long," explained Commissioner Cromar. "The fry are hatched in troughs specially prepared for the purpose. Running water passes through the troughs constantly, and after the fish leave the sacs they are fed several time a day until they are perhaps two inches long, when they are big enough to hustle for themselves. At this stage they are taken from the troughs and planted in running water where conditions are favorable to their growth.

BIGGER PLANT NEEDED.

"What we need," said Mr. Cromar, "is to have this plant doubled in size. When this is done we can produce three hatchings a year, with between 2,000,000 and 3,000,000 of fry at each hatching, and with this foundation we should be able to keep up the supply of trout in the running streams of the state. The earliest variety of trout to spawn is the brook trout, which deposits its eggs in November, and the hatching takes place in January. Brown trout also spawn with the brooks. The rainbow variety comes next, this species spawning in January, and the fry are ready in May. The native, or mountain trout, are the latest in spawning, as it is June before their eggs are laid, and they cannot be hatched until September or October; but the native trout are the best of them all, and are well worth waiting for.

EIGHT MILLIONS A YEAR.

"The brook and rainbow varieties are the most rapid growers," said Mr. Cromar. "In one year from the egg, your brown or your brook or rainbow trout has put on nine inches in length, and plump in proportion. The native does not grow so rapidly, requiring two years for similar growth, and for this reason we are compelled to secure the other varieties to replace the depleted stock, some of which come from California, some from Pennsylvania, and some from other parts of the Union. I have put out of this station altogether, since I came into the office, 3,150,000 fry, and from all reports I can receive, they are all doing marvelously well. The fish, when properly planted, will thrive in our mountain streams, there is no reason why they should not do well. We are making preparations to extend the scale of operations here," said Mr. Cromar, pointing to the large ponds being constructed of concrete, cement and iron bars, "and with added equipment and facilities we will easily be able to run the production of trout fry up to 8,000,000 a year!"

JOY IN STORE.

Eight millions of fry a year! Distributed over 20 streams, this would mean an average of 400,000 per year for every stream. Now may the heart of the devoted disciple of Izaak Walton rejoice. From the wader-encased expert with the double fly and the automatic reel down to the diminutive, out-at-the-rear urchin with the twine line and pin hook, what does not the future hold for you, landing those prospective three-pounders! Revolve in your mind how you will tell them all about it when you get back to camp; how you were just turning a little bend in the river when you saw what looked like a splendid hole; how you dropped your hook over a little clump of bushes, hanging over a dark eddy in the stream, and how, before you could wink, the big fellow made a jump for your hook and before you knew it there he was, safely behind the iron barbs; how his speckled sides sparkled in the sun as he whipped the water with his tail, and how he looked more like a whale as he tugged at that hook, than like a mere three-pounder, but he was big enough anyhow; how the battle royal began; how the trout, stung by the pain of the sharp little barbs, made a lunge for liberty which started your reel to buzzing to desist only when his troutship had lodged in the deepest hole in the stream, and in under all that brush.

AFTER HIS FINSHIP.

There was nothing else to do—and if there had been you couldn't have done it—but to get right into the water and go right after his fishship—fight him on his own grounds. So, cautiously keeping a tight line on Mr. Fish, reeling him gently towards you all the time, you step down into the stream and begin to look around for a place to wade where you won't sink in over your boots, gently coaxing the fish to bear down stream a bit until you can get foot near that bar yonder, arrived at which vantage ground you can inveigle him from his lair above and drop him into the basket at your feet! Nobly planned—how executed?

CHALLENGE ACCEPTED.

In response to your reeling invitation, the trout accepts the challenge and rushes out into the stream. He needs neither brush nor bramble but dives madly across the water toward the bank, and as suddenly veers around and shoots back into the deep again. Up stream he darts, trailing your line after him almost as far as it will reach, but not quite; luckily he stops just in time and your agility is taxed to keep that hook tight in his mouth. Back and forth he dashes, now and anon flashing to the surface and showing his shining back and sides and instantaneously lunging away again to the blue depths below. All at once, after a mighty struggle, he comes to the surface, tired and limp, his gills working convulsively and everything indicating he is your fish. You still have a good hold on him and the struggle is nearly over. Slowly, carefully, now, you start to reel him in; gradually you lay him over to one side with your rod so that the current will bring him right down to your feet head pointed upward, and all you have to do is to hold him taut until the supreme, masterful moment, when after 25 minutes of good hard fighting, you reach down with your cotton gloved hand to gather the big fellow in, when—splash! With one final swish and a last good bye, your three-pound beauty is gone!

MEN WERE DECEIVERS EVER.

The hands of the clock were marking the hour of 12, midnight. She had been waiting two hours for him, fier anger, from a gentle simmering, gradually increased in temperature, until the boiling point was reached. She was ready for him, and as he entered the room she opened her mouth to pour out the accumulated contents of the reservoir of her wrath. But before she could get out a word, he said:

"Look here, lovey, d'ye think marriage is a lottery?"

She was so taken back that she could only murmur that she didn't know.

"It ain't!" he said. The other fellows at the club have been arguing that it is—that's why I'm late. But I said: 'How can marriage be a lottery, when a fellow has only to look round him to pick out the first prize—same as I did? No lottery about that?'"

She brought him his slippers, and five minutes later she was opening a box of sardines for him with his best razor!

And Robinson winked solemnly at the canary, and enlarged inwardly on the virtues of the soap which is soft.—Pearson's Weekly.